

System Settings - Main Menu Setup Tab

Units - Depth selects the units of measure for all depth-related readouts. *International Models Only.*

Units - Temp selects the units of measure for all temperature-related readouts. This menu is only visible if temperature is available. *International Models Only.*

Units - Distance selects the units of measure for all distance-related readouts. *With Temp/Speed Accessory only.*

Units - Speed selects the units of measure for all speed-related readouts. *With Temp/Speed Accessory only.*

Triplog Reset resets the Triplog to zero.

User Mode displays additional Advanced Menus within the menu system when set to Advanced. When set to Normal (default setting,) only the basic menu options are shown. See Advanced User Mode section.

Language selects the display language for menus. *International Models Only.*

Restore Factory Defaults resets ALL menu settings to their factory defaults. Use this menu with caution!

Advanced User Mode

Preset menu modes are available to suit your personal Angler Profile - whether you're a Normal User or Advanced User. These Angler Profile Presets™ provide an Advanced Mode for users who desire the highest level of control over the product, and Normal Mode for users who desire the greatest simplicity and fewest choices.

Choose User Mode from the Setup Tab and change the selection to Advanced to access advanced features. A range of additional options will be displayed in the menu system. Any changes made under the Advanced mode will remain in effect if the unit is returned to Normal mode.

Sonar Menu - Advanced User Mode	
Surface Clutter	Adjusts filter that removes surface clutter noise caused by algae and aeration. (Low = 1, High = 10)
Noise Filter	Activates the sonar Noise Filter to limit interference from other devices. (On, Off)
Water Type	Configures unit for type of water conditions. (Salt, Fresh) <small><i>Note: In salt water, what would be considered a large fish might be 2 to 10 times bigger than a large fish in fresh water (depending on the type of fish you are seeking). The salt water setting allows for a greater range in fish size adjustment to account for this. Also, make sure that the Water Type is set accurately, especially in salt water, as this can affect the accuracy of deep water depth readings.</i></small>
System Setup Menu - Advanced User Mode	
Select Views	Access submenus to hide or show individual views available on the Matrix unit. This includes new views added when new accessories are connected.
Select Readouts	Accesses submenus to hide or show individual digital readouts on the Sonar View. This includes readouts from supported accessories.
Depth Offset	Adjusts digital depth readout to indicate depth from the waterline or keel. Enter a positive vertical measurement (+1, +2, +3 feet) from the transducer to waterline to read the depth from the waterline. Enter a negative vertical measurement (-1, -2, -3 feet) from the transducer to keel to read the depth from the keel. (-10 feet to +10 feet)
Temperature Offset	Adjusts temperature readout by entered amount to match other gauges. (-10 to +10)
Speed Offset	Adjusts speed readout by entered percentage to match other gauges. (-20% to +20%)

Using System Status

When System Status is selected on the Start-Up menu, the Matrix displays a series of three views to provide information about the unit.

Self Test displays results from internal diagnostic self test, including software revision, total hours of operation and the input voltage from the power source.

Sonar Test displays unprocessed sonar returns on the display from each beam to confirm that sonar is operational.

Accessory Test lists the accessories connected to the system. Note that the speed accessory is only detected when the paddlewheel is moving.

Exit System Status mode by powering the unit off.

Using PC Connect

When **PC Connect** is selected from the Startup Menu, the Matrix unit enters a communication mode and waits for a connection with a PC. Complete instructions are included with the PC Connect accessory (AS-PC). **Exit** PC Connect mode by powering the unit off.

WARNING: Disassembly and repair of this electronic unit should only be performed by authorized service personnel. Any modification of the serial number or attempt to repair the original equipment or accessories by unauthorized individuals will void the warranty. Handling and/or opening this unit may result in exposure to lead, in the form of solder.

WARNING: This product contains lead, a chemical known to the state of California to cause cancer, birth defects and other reproductive harm.

Sonar Settings - X-Press™ Menu

The X-Press menu represents the settings most frequently-used to optimize the sonar performance of the Matrix unit. Press the MENU key once while in a Sonar View to access the following X-Press menu settings quickly:

Sensitivity provides advanced control over the sonar receiver. The Matrix unit optimizes Sensitivity based on depth and water conditions automatically; however, you also may change it manually to match your preferences or water conditions. Increasing the sensitivity shows more

sonar returns from small bait fish and suspended debris in the water; however, the display may become too cluttered in some water conditions. When operating in very clear water or greater depths, increased sensitivity shows smaller returns that may be of interest. Decreasing the sensitivity eliminates the clutter from the display that is sometimes present in murky or muddy water. If Sensitivity is adjusted too low, the display may not show many sonar returns that could be fish.

Upper Depth Range adjusts the Sonar View upper range to a specific depth. Zero (0) is the default setting.

Lower Depth Range adjusts the Sonar View lower range to a specific depth. Automatic is the default setting. Selecting a specific setting locks the depth range into manual mode. Advanced anglers use both Upper and Lower Depth Range together to view a specific depth range manually when looking for fish or bottom structure.

Chart Speed determines the speed at which the bottom information moves across the display, and consequently the amount of detail shown. A faster speed shows more information in the Sonar View and is preferred by most anglers; however, the bottom moves across the display quickly. The highest setting is an ultrafast mode that provides the highest chart speed possible by slowing down other system functions. A slower speed keeps the information on the display longer, but the bottom and fish detail becomes compressed and may be difficult to interpret. Regardless of the Chart Speed setting, the RTS® Window will update at the maximum rate possible for the depth conditions. Adjust Chart Speed to your personal preference.

Zoom Level sets the magnification level on the Sonar Zoom View.



Sonar Settings – Main Menu System

Less frequently-adjusted menus are grouped into the Main Menu System. Press the MENU key twice to access the Main Menu System.

Fish ID+™ uses advanced signal processing to interpret sonar returns and display a Fish Symbol when very selective requirements are met. A number above the fish icon indicates the depth of the fish. Three different fish size icons show the intensity of the sonar return, and provide an indicator of relative fish size. When Fish ID+ is turned off, the Matrix shows only the unprocessed sonar returns on the display. These returns will often result in "arches" forming on the display, indicating potential targets.

Fish Sensitivity adjusts the thresholds of the fish detection algorithms, thus enhancing your unit's ability to identify sonar returns as fish icons. Selecting a higher setting allows smaller returns to be displayed as fish icons and will increase the number of fish icons that appear on the display. This is useful for identifying smaller fish species or baitfish. Selecting a lower setting displays fewer fish icons by eliminating many small sonar returns. This is helpful when seeking larger species of fish.

Bottom View selects the method to display bottom and structure on the display. **WhiteLine®** highlights the strongest sonar returns from the bottom to make a distinctive outline of the bottom contour, structure and fish. **Structure ID®** presents the graphical representation of the bottom and structure sonar returns using only grayscale to indicate the signal strength. **Bottom Black** displays all pixels below the bottom contour as black, regardless of signal strength.

RTS Window turns the RTS window on or off in the Sonar View.



Alarm Settings - Main Menu Alarm Tab

Various audible alarms can be triggered in the Matrix unit based on these menu settings. When an alarm is triggered, it can be silenced by pressing the EXIT key.

Depth Alarm sounds when the digital depth becomes equal or less than the menu setting.

Fish ID Alarm sounds when the Fish ID+ feature displays fish symbols that correspond to the menu setting.

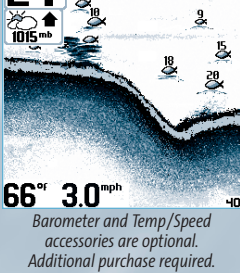
Battery Alarm sounds when the input battery voltage is equal to or less than the menu setting.

Alarm Tone selects the pitch of the alarm sound to improve audibility. As the menu is adjusted a brief tone will be produced so that you can select the tone that you can hear best.



Depth Capability	800 ft (250 m)	Target Separation	2 ½ Inches (63.5 mm)
Power Output	250 Watts (RMS)	Power Requirement	10-20 VDC
	2000 Watts (Peak to Peak)	LCD Matrix.....	240 V x 240 H
Operating Frequency	200 kHz	Transducer (Standard)	XHS-9-24-T (models with Temperature)
Area of Coverage.....	24°@ -10 dB	Transducer Cable Length.....	20 ft (6 m)

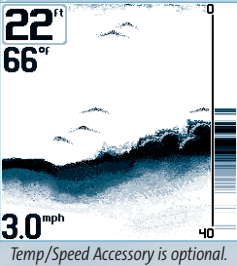
Sonar Views



Sonar View presents a historical log of the stored sonar returns. The most recent sonar returns are charted on the right side of the window; as new information is received, the older information is moved across the display. A **Digital Depth Readout** is displayed in the upper left corner. A scale with Upper and Lower **Depth Range** readouts appears along the right edge of the Sonar View. The scale indicates the distance from the surface of the water to a depth range sufficient to show the bottom. Depth Range is automatically selected to keep the bottom visible on screen, although it can be manually-adjusted by the user as well (see Sonar Settings - X-Press™ Menu). Up to five additional Digital

Readouts display information from optional-purchase accessories such as Water Temperature, Trolling Speed, WeatherSense™ Barometric Pressure and more. These information boxes can be customized to show only the information desired (see Advanced User Mode - Select Readouts).

A **Real Time Sonar (RTS®)** window appears on the right side of the display. The RTS Window always updates at the fastest rate possible for depth conditions and shows only the returns from the bottom, structure and fish that are within the transducer beam. In the RTS Window, sonar returns are shown in shades of gray. The most intense returns are shown as a solid black band that indicates the bottom. The thickness of the bottom band indicates bottom type. Hard bottoms appear thinner and mostly black; softer bottoms are thicker and may appear with many gray tones. Above the bottom band, less intense sonar returns shown as varying shades of gray indicate the sonar returns from fish or structure. The RTS Window can be turned on or off (see Sonar Settings - Main Menu System).

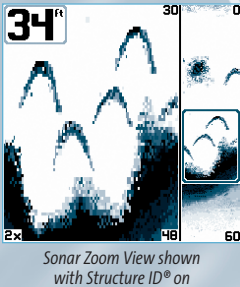
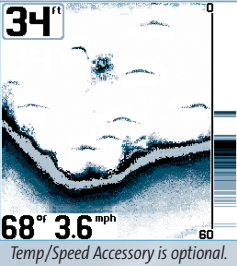


As the boat moves, the Matrix unit charts the changes in depth on the display to create a profile of the Bottom Contour. The default presentation highlights the bottom profile with a **WhiteLine®** feature and gray tones. From the appearance of the gray tones in the bottom contour, the type of bottom can be determined. A **Hard Bottom** such as compacted sediment or flat rock appears as a thinner dark line across the display. A **Soft Bottom** such as mud or sand appears as a thicker line that contains a transition from darker to lighter grays. **Rocky Bottoms** have a broken, random appearance. In shallower water, a **Second**

Sonar Return may appear as a bottom contour below the main bottom at twice the depth. The second return occurs when the sonar signal bounces between the bottom and the surface of the water and back again. Experienced anglers use the appearance of the second return to

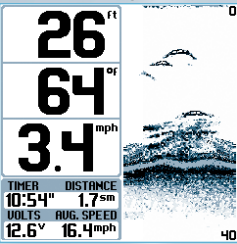
determine bottom hardness. Hard bottoms will show a strong second return, while soft bottoms will show a very weak one or none at all. The Matrix unit is capable of revealing layers of water with different temperatures called **thermoclines**. Thermoclines appear at different depths and different times of the year. A thermocline typically appears as a continuous band of many gray levels moving across the display at the same depth.

Due to the transducer beam angle, the distance to a fish decreases as the fish moves into the beam, and then increases as it moves out again, creating a **Fish Arch** when this distance change is graphed on the display. Boat speed, chart speed, and the position of the fish within the sonar beam greatly affect the shape of the arch. For optimum fish arching, it is important to mount the transducer so that it is pointing straight down. The Matrix unit has an advanced Selective Fish ID+™ option that analyzes the sonar return to determine if the sonar return may contain a fish (see Sonar Settings - Main Menu System). When a target is detected, a Fish ID+™ symbol appears on the display with the depth. The size of the symbol indicates the intensity of the sonar return. The Matrix unit will clearly show schools of bait fish as "clouds" of different shapes and sizes, depending on the number of fish and boat speed.



Sonar Zoom View increases the display resolution to separate sonar returns that are very close together, such as those caused by fish suspended close to the bottom or within structure. In Zoom View, the display is split to show a full range view on the right and the zoomed view on the left. As the depth changes, the zoomed view updates automatically to display a magnified image of the bottom. The Zoom Preview Box shows where the zoomed view is in relation to the full range view. The **Zoom Level**, or **magnification**, is displayed in the lower left corner and can be changed to suit conditions (see Sonar Settings - X-Press Menu). Upper and Lower Zoom Depth Range numbers indicate the depth of the water which is being viewed.

Big Digits View provides digital data in a large, easy-to-see format. Depth and battery voltage are always displayed. Readouts for temperature, speed and Triplog information are displayed if the appropriate accessory is connected to the system. The Triplog shows distance traveled, average speed, and time elapsed since the Triplog was last reset (see System Settings - Main Menu Setup Tab).



WARNING! This device should not be used as a navigational aid to prevent collision, grounding, boat damage, or personal injury. When the boat is moving, water depth may change too quickly to allow time for you to react. Always operate the boat at very slow speeds if you suspect shallow water or submerged objects.

We encourage you to read this operation manual carefully in order to get full benefit from all the features and applications of your Humminbird product.



How Sonar Works

Sonar technology is based on sound waves. The Matrix™ Fishing System uses sonar to locate and define structure, bottom contour and composition, as well as calibrate digital depth directly below the transducer.

Your Matrix unit sends a sound wave signal and determines distance by measuring the time between the transmission of the sound wave and when the sound wave is reflected off of an object; it then uses the reflected signal to interpret location, size, and composition of an object.

Sonar is very fast. A sound wave can travel from the surface to a depth of 240 ft (70 m) and back again in less than ¼ of a second. It is unlikely that your boat can "outrun" this sonar signal.



Matrix Sonar System

Your Matrix uses a single frequency 200 kHz sonar system with a 24° area of coverage. Depth capability is affected by such factors as boat speed, wave action, bottom hardness, water conditions and transducer installation. All sonar units typically read to deeper depths in fresh water than in salt water. Your Matrix transducer also comes with a temperature sensor included!

Powering Up the Unit

Turn on the Matrix unit by momentarily pressing the POWER key. A startup screen is then displayed until the Matrix unit begins sonar operation. While the startup screen is displayed, you may press the MENU key for the other options listed below. If no key is pressed, the Matrix will begin Normal or Simulator operation, depending on the presence or absence of a transducer. The following operating states are available:

- Normal** – Use for on the water operation with transducer connected.
- Simulator** – Use to learn the features and functions of the Matrix unit. Simulates on the water operation.
- System Status** – Use to view system connections and conduct a unit self-test.
- PC Connect** – Use when upgrading Matrix internal software with a PC and PC Connect cable.

The Matrix unit uses advanced transducer detection methods to determine if a transducer is connected. If the transducer is not connected or is damaged, the unit will select the Simulator state automatically at startup. If a functioning transducer is connected, the unit will select the Normal operating state automatically and the unit can be used on the water.

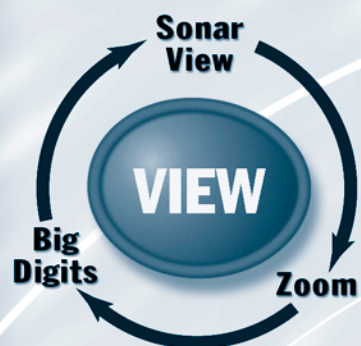
Note: When operating in Simulator state with a transducer connected, Menu setting changes are saved to memory. If a transducer is not connected, changes will not be saved and Menu settings will revert to factory defaults every few minutes.

© 2002. All rights reserved.



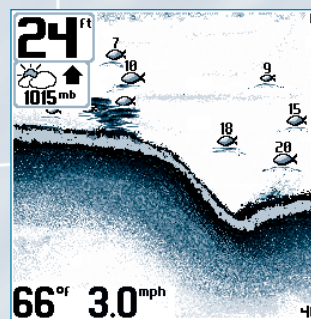
Power/Light

Momentarily press POWER to turn the unit on. While the unit is on, momentarily press POWER to access Light and Contrast menus. Press and hold POWER for 3 seconds to turn the unit off.

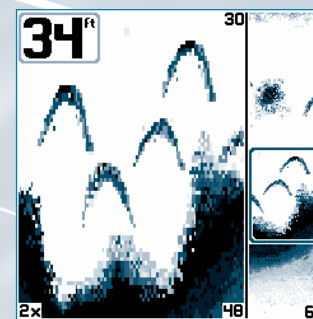


View

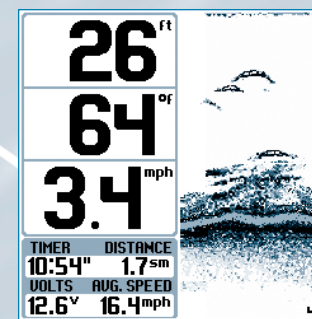
Press the VIEW key to advance to the next view. Repeatedly pressing VIEW cycles through all views available. Views can be hidden to optimize the system to your fishing requirements (see System Setup Menu - Advanced User Mode on the other side of this manual).



Sonar View



Zoom View

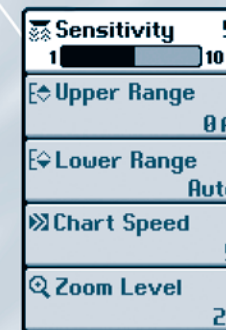


Big Digits View



X-Press™ Menus

Press the MENU key once for the X-Press™ Menu. The X-Press menu allows you to access the settings that you change frequently without having to navigate through a menu system. Only the X-Press menu items associated with the current view are displayed.



4-Way Menu Control

Use UP or DOWN to select a menu item. Use LEFT or RIGHT to make a menu choice.

Note: Menu choices are implemented and saved immediately - no further action is required.



Main Menu System

Press the MENU key twice for the Main Menu System. The menu system is organized under tab headings to help you find a specific menu item quickly. In the main menu, first use the 4-Way Menu Control LEFT or RIGHT key to select a tab; then use the UP or DOWN key to select the menu item. The menu system is expandable; when you attach a supported accessory to the Matrix system, the Matrix menus may change to display new choices for those accessories that require menu access.

Note: Instruction guides included with the accessory will detail accessory-specific features and functions.



EXIT

Exit

The EXIT key has multiple functions, depending on the situation:

- If an alarm is sounding, pressing EXIT will cancel the alarm.
- If a menu tab is selected, pressing EXIT will exit the menu mode and return to the view.
- If a menu is active, pressing EXIT will return to the previous level in the menu system.
- If a cursor is active on the display, pressing EXIT will clear the cursor from the display.

MATRIX MENUS

X-Press™ Menu

Sensitivity	Adjusts the sonar Sensitivity (Low = 1, High = 10)
Upper Depth Range	Adjusts the Upper Depth Range (0 - 790 feet)
Lower Depth Range	Adjusts the Lower Depth Range (Auto, 10- 800 feet)
Chart Speed	Adjusts the speed of the display movement (1-5, Ultra, where 1=Slow, 5=Fast, Ultra=Fastest)
Zoom Level	Adjusts the zoom magnification for Zoom View (2x, 4x, 6x, 8x)

Sonar Main Menu

Fish ID+™	Activates Fish ID+ target identification and fish symbols (On, Off)
Fish Sensitivity	Adjusts the fish detection sensitivity (Low = 1, High = 10)
Bottom View	Selects style of bottom presentation for Sonar Views (Bottom Black, Structure ID®, WhiteLine®)
RTS® Window	Activates the Real Time Sonar Window on Sonar Views (On/Off)

Note: The following additional menu items are available when Advanced User Mode is enabled: Surface Clutter, Water Type and Noise Filter. See Advanced User Mode section.

Alarm Main Menu

Fish ID Alarm	Sets the Fish ID Alarm size (Off, Large, Large/Med, All)
Depth Alarm	Sets the Depth Alarm point (Off, Depth Setting)
Battery Alarm	Sets the Battery Alarm point (Off, Voltage)
Alarm Tone	Sets the pitch of the alarms (Low, Medium, High)

System Setup Main Menu

Units - Depth*	Selects the unit of measure for depth (Feet, Meters, Fathoms)
Units - Temperature*	Selects the unit of measure for temperature (Fahrenheit/Celsius)
Units - Distance**	Selects the unit of measure for distance (sm, nm, km*)
Units - Speed**	Selects the unit of measure for speed (mph, kts, kph*)
Triplog Reset	Resets the Triplog to zero
User Mode	Selects the user mode menus (Normal, Advanced)
Language*	Selects the menu display language
Restore Factory Defaults	Restores all settings to the Factory Defaults

Note: The following additional menu items are available when Advanced User Mode is enabled: Select Views, Select Readouts, Depth Offset, Temperature Offset, Speed Offset. See Advanced User Mode section.

**Note: Menu item available on International models only.*

***Note: Menu item available with Temp/Speed Accessory only.*

Matrix Fishing System Advanced Accessories

Your Matrix unit represents a revolutionary Fishing System that grows in capability with the addition of one or more accessories. Accessories customize the Matrix Fishing System to your needs and enable you to stay on the edge of new technology and to catch more fish. When an accessory is connected to the system, additional menus, readouts and views are added automatically to your Matrix menu system. Note that some accessories may require additional software to be loaded into the Matrix product. Accessories available today that are supported by your Matrix include:

Temperature/Speed: simply plugs into the Matrix unit and provides real time speed and temperature readouts, as well a valuable Triplog function.

Note: If an external Temperature/Speed (TS-W) or Temperature (TG-W) accessory is connected AND a transducer with temperature built in is connected at the same time, the TS-W or TG-W accessory will override the temperature which is built in to the transducer.

WeatherSense™ Fishing Condition Monitor: simply plugs in to the Matrix unit and provides barometric pressure readout and trend data. Professional fishermen know that barometric pressure impacts fish behavior and they modify their tactics based on it. Now you can have access to barometric pressure data in real time, right on the boat.

GPS Connection Cable: adds GPS capability to the Matrix unit by connecting a handheld or other NMEA® GPS-compatible device. GPS capability instantly turns your Matrix into a Combo-Trackplotter to show position, breadcrumb trail and waypoints on the big, easy-to-read screen, all with big, easy-to-use buttons that handhelds do not offer. In addition, you can store up to 750 waypoints and 10 tracks inside the Matrix unit!

PC Connect Cable: links the Matrix unit to a PC to access product software updates and new features from www.humminbird.com. This accessory requires the MSWindows-compatible HumminbirdPC™ software from our Website to communicate with the Matrix unit. If you have upgraded to GPS, you can easily enter, annotate and exchange fishing spots with friends and download them into your Matrix unit using this cable.

Be sure to check out our website www.humminbird.com for additional new and exciting accessories to grow your Matrix Fishing System!

**NMEA 0183 is a National Marine Electronics Association standard for data communication.*

Tilt and Swivel Mount

Your Matrix unit will tilt up to 90° and swivel up to 360° to accommodate your viewing preferences.

Quick Disconnect Mounting System

Press the button located to the rear of your Matrix unit to release the lock and remove the head unit from the base.

